

CLAIMS

1. A method for enhancing the generation of hydroxyl radicals (OH*) in aqueous mixtures containing hydrogen peroxide, comprising
 - i) supplying oxygen to said mixture;
 - ii) supplying magnesium oxide to said mixture as a catalyst;
 - iii) irradiating said mixture with UV light; and
 - iv) mixing said mixture.
2. The method of claim 1, wherein the aqueous mixture is an aqueous solution or suspension.
3. The method of claim 1, wherein hydrogen peroxide has an initial concentration of from 2 to 250 ppm.
4. The method of claim 1, wherein oxygen is supplied by injecting of air or oxygen into the mixture.
5. The method of claim 1, wherein oxygen is supplied to saturation.
6. The method of claim 1, wherein said UV radiation has wavelength of from 190 to 390 nm.
7. The method of claim 1, wherein magnesium oxide is added to the mixture to a concentration of from 2 ppm to 250 ppm.
8. The method of any one of claims 1 to 7, wherein the initial concentration of hydrogen peroxide is from 10 to 50 ppm, and the initial concentration of magnesium oxide is from 10 to 50 ppm.
9. The method of any one of claims 1 to 8, wherein the pH of said mixture has a value of from 5 to 10.

10. The method of claim 9, wherein said pH has a value of 7.2 to 9.7.
11. The method of claim 1, wherein said mixing is carried out for a period of time sufficient to generate the desired amount or radicals.
12. The method of claim 11, wherein said desired amount of radicals is an amount sufficient to reach a required biocidal effect in the mixture.
13. The method of claim 11, wherein said period lasts from 3 seconds to 5 hours.
14. The method of claim 13, wherein said period lasts from 30 second to 100 minutes.
15. The method of claim 11, wherein said period lasts more than 5 hours.
16. The method of claim 11, wherein said desired amount of radicals is a predetermined quantity.
17. The method of claim 11, wherein generated radicals are quantified by a physical or chemical method.
18. The method of claim 17, wherein said chemical method comprises reacting hydroxyl radicals with salicylic acid.